

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
30 June 2005 (30.06.2005)

PCT

(10) International Publication Number  
**WO 2005/058793 A1**

(51) International Patent Classification<sup>7</sup>: **C07C 67/327**,  
69/533, 67/327

(21) International Application Number:  
PCT/EP2004/053536

(22) International Filing Date:  
16 December 2004 (16.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
03258057.3 19 December 2003 (19.12.2003) EP

(71) Applicant (for all designated States except US): **SHELL  
INTERNATIONALE RESEARCH MAATSCHAPPIJ  
B.V.** [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR  
The Hague (NL).

(72) Inventors; and

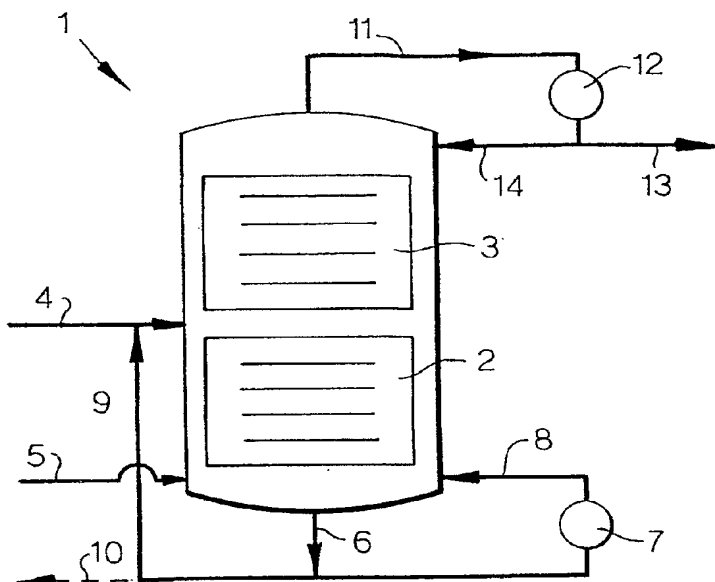
(75) Inventors/Applicants (for US only): **HAAN, Rene Johan**  
[NL/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL).  
**LANGE, Jean-Paul** [BE/NL]; Badhuisweg 3, NL-1031  
CM Amsterdam (NL).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,  
ZW.

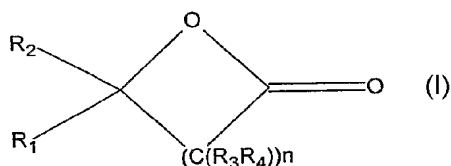
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: A PROCESS FOR THE PREPARATION OF AN ALKYL ALKENOATE



(57) Abstract: A process for the preparation of an alkyl alkenoate, wherein a lactone of the general molecular formula (I) wherein n is 1, 2 or 3, R<sub>1</sub> is a C<sub>1</sub>-C<sub>4</sub> alkyl group, and R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are, independently, a H atom or a C<sub>1</sub>-C<sub>4</sub> alkyl group, is reacted with a C<sub>1</sub>-C<sub>4</sub> alkyl alcohol in a liquid phase in the presence of a strong acid catalyst at transesterification conditions to form the alkyl alkenoate, wherein alkyl alkenoate and alcohol are continuously removed from the liquid phase by distillation.





ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— *with international search report*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*